

Appendix C. Assessment of Preliminary Options

The assessment of preliminary at each mine is contained in this appendix:

- C.1 – Assessment of preliminary options at Yallourn;
- C.2 – Assessment of preliminary options at Hazelwood; and
- C.3 – Assessment of preliminary options at Loy Yang.

C.1 Assessment of preliminary options at Yallourn

All six preliminary options were assessed for Yallourn using the MCA methodology, results from the assessment are summarised in Table 10-9 . Ratings are made on the basis that compliance can be achieved with sound technical certainty, acceptable residual risk and reasonable cost.

Table 10-9 Yallourn Multiple Criteria Analysis Results

Criteria	Compliance Statement	Preliminary Options Assessment					
		Option - Pit Lake	Option - Full Back Fill	Option - Partial Back Fill above the Water Table	Option - Lined Void	Option - Partial Back Fill below the Water Table	Option - Rehabilitated Void
Fire risk	<ul style="list-style-type: none"> Progressive implementation of the landform will maintain or reduce the fire risk in the medium and long term. 	Exceeds Compliance	Exceeds Compliance	Complies	Complies	Complies	Complies
Mine Stability	<ul style="list-style-type: none"> Establishment of the landform will sustain safety and stability requirements during operations 	Complies	Complies	Complies	Partly Complies	Complies	Partly Complies
Final Landform stability	<ul style="list-style-type: none"> Establishment of the landform will achieve safety and stability requirements following the cessation of operations 	Complies	Exceeds Compliance	Exceeds Compliance	Partly Complies	Complies	Complies
Groundwater	<ul style="list-style-type: none"> The landform will not alter groundwater quality (from background). The landform will not impact upon groundwater dependent ecosystems (GDE's). The landform will not impact on groundwater availability for other users. 	Partly Complies	Complies	Complies	Complies	Partly Complies	Complies
Surface water	<ul style="list-style-type: none"> The landform will not alter surface water drainage or water quality (from background). The landform will not impact upon ecological water requirements. The landform will not impact on surface water availability for other users. 	Partly Complies	Complies	Complies	Complies	Complies	Complies
Biodiversity	<ul style="list-style-type: none"> Ecological function of the landform will be aligned with the regional catchment strategy. 	Partly Complies	Complies	Complies	Non-compliant	Complies	Partly Complies
Future beneficial land use	<ul style="list-style-type: none"> The landform supports multiple land uses and the ability to adapt to changing community expectations, economic conditions and environmental values. 	Complies	Complies	Complies	Partly Complies	Complies	Partly Complies
Compatibility	<ul style="list-style-type: none"> The landform supports multiple landform options at other sites. 	Complies	Partly complies	Partly complies	Partly complies	Complies	Partly complies
Statutory and Work Plan Consideration	<ul style="list-style-type: none"> The landform is compliant with the <i>Mineral Resources (Sustainable Development) Act 1990</i> The landform does not require significant deviation from the current mine plans The landform minimises the special conditions pursuant to relevant legislation at the time. 	Complies	Non-compliant	Non-compliant	Non-compliant	Complies	Non-compliant

During the MCA assumptions, advantages and disadvantages for the 6 preliminary rehabilitation options at Yallourn were recorded in order to determine preliminary options which were potentially viable. This information is provided below.

Table 10-10 Assessment of preliminary options at Yallourn

Criteria	Compliance Statement	Option - Pit Lake		Option - Full Back Fill		Option - Partial Backfill Above the Water Table		Option - Lined Void		Option - Partial Backfill below the Water Table		Option - Rehabilitated Void	
		Rating	Assumptions	Rating	Assumptions	Rating	Assumptions	Rating	Assumptions	Rating	Assumptions	Rating	Assumptions
Fire risk	Progressive implementation of the landform will maintain or reduce the fire risk in the medium and long term	Exceeds Compliance	Operational controls for fire prevention and response are maintained in short and medium term All exposed batters above lake water level are progressively covered with overburden	Exceeds Compliance	Operational controls for fire prevention and response are maintained in short and medium term All exposed batters above backfill (BFL) are sufficiently covered with overburden Fill material above water table level is non-combustible	Complies	Operational controls for fire prevention and response are maintained in short and medium term All exposed batters above BFL are progressively covered with overburden	Complies	Operational controls for fire prevention and response are maintained in short and medium term Liner to be engineered to be a fire barrier	Complies	Operational controls for fire prevention and response are maintained in short and medium term All exposed batters above lake water level (LWL) and BFL are sufficiently covered with overburden Fill material above water table level is non-combustible	Complies	Operational controls for fire prevention and response are maintained in short and medium term All batters to be covered with overburden
Mine Stability	Establishment of the landform will sustain safety and stability requirements during operations	Complies	Dewatering and depressurisation of the mine will continue within the short term Progressive placement of overburden on pit floor and batters will be undertaken Progressive rehabilitation above final lake water level will be undertaken	Complies	Dewatering and depressurisation of the mine will continue within the short term Progressive placement of overburden on pit floor and batters will be undertaken Progressive rehabilitation above BFL will be undertaken	Complies	Dewatering and depressurisation of the mine will continue within the short term Progressive placement of overburden on pit floor and batters will be undertaken Progressive rehabilitation above BFL will be undertaken	Partly Complies	Dewatering and depressurisation of the mine will continue within the short term Progressive capping of batters will be undertaken within the short term Shaping to required batter angles and construction of final surface can be achieved in combination with available overburden	Complies	Dewatering and depressurisation of the mine will continue within the short term Progressive placement of overburden on pit floor and batters will be undertaken Reshaping of batters and backfill above LWL will be undertaken	Partly Complies	Dewatering and depressurisation of the mine will continue in the short term Shaping to required batter angles and construction of final surface can be achieved in combination with available overburden
Final Landform stability	Establishment of the landform will achieve safety and stability requirements following the cessation of operations	Complies	Sufficient placement of overburden can be achieved prior to cessation of dewatering to maintain weight balance during filling Depressurisation will be managed over medium term to maintain weight above weight balance limit The lake water level (LWL) can be actively maintained with balance of groundwater and surface water inflows Progressive rehabilitation above final lake water level will be undertaken	Exceeds Compliance	Sufficient material can be sourced on site or locally to achieve backfill to crest level Cessation of dewatering and depressurisation will be managed over medium term to maintain weight above weight balance limit	Exceeds Compliance	Sufficient material is available locally to achieve required backfill level Cessation of dewatering and depressurisation will be managed over medium term to maintain weight above weight balance limit Progressive rehabilitation of batters above the backfill level will be undertaken	Partly Complies	Reshaping of batter angles can be achieved with available overburden Dewatering and depressurisation of the mine will continue within and beyond the medium and long term	Complies	Sufficient placement of overburden can be achieved prior to cessation of dewatering to maintain weight balance during filling Depressurisation will be managed over medium term to maintain weight above weight balance limit The lake water level (LWL) can be actively maintained with balance of groundwater and surface water inflows Progressive rehabilitation above final lake water level will be undertaken Progressive rehabilitation of batters and backfill above LWL will be undertaken	Complies	Reshaping of batter angles can be achieved with available overburden Dewatering and depressurisation of the mine will continue within the medium and long term
Groundwater	The landform will not alter groundwater quality (from background).	Partly Complies	Will require active flushing or water cycling of water to maintain pit lake water quality	Complies	The fill material has similar chemical signature as the aquifers or is inert	Complies	The fill material has similar chemical signature as the aquifers or is inert	Complies	Sufficient clay material to establish hydraulic barrier is available	Partly Complies	Will require active flushing or water cycling of water to maintain pit lake water quality	Complies	Dewatering outflow will be returned to the system and be available to other users over the medium

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Criteria	Compliance Statement	Option - Pit Lake		Option - Full Back Fill		Option - Partial Backfill Above the Water Table		Option - Lined Void		Option - Partial Backfill below the Water Table		Option - Rehabilitated Void	
		Rating	Assumptions	Rating	Assumptions	Rating	Assumptions	Rating	Assumptions	Rating	Assumptions	Rating	Assumptions
	The landform will not impact upon groundwater dependent ecosystems (GDE's). The landform will not impact on groundwater availability for other users		The pit will need to be managed as a sink for groundwater that will require permanent licence or allocation.		Natural flow through of groundwater will be achieved		Natural flow through of groundwater will be achieved		Dewatering outflow will be returned to the system and be available to other users over the medium and long term		Lake water level (LWL) will be maintained below groundwater level (GWL) [i.e. lake will act as groundwater sink]		and long term
Surface water	The landform will not alter surface water drainage or water quality (from background) The landform will not impact upon ecological water requirements The landform will not impact on surface water availability for other users	Partly Complies	Management of water allocation and discharge will be required over medium and long term Natural flows will be constrained due to requirement to maintain LWL in medium and long term	Complies	Final landform will conform to general drainage pattern of surrounding area Natural flows will be returned to adjacent rivers in medium and long term	Complies	Will require significant drainage control around pit to exclude external inflows Will require management of internal water capture through evaporation Natural flows will be returned to adjacent rivers in medium and long term	Complies	Will require significant drainage control around pit to exclude external inflows Will require management of internal water capture through evaporation Natural flows will be returned to adjacent rivers in medium and long term	Complies	Management of water allocation and discharge will be required over medium and long term Natural flows will be constrained due to requirement to maintain LWL in medium and long term	Complies	Will require significant drainage control around pit to exclude external inflows Will require management of internal water capture through evaporation Natural flows will be returned to adjacent rivers in medium and long term
Biodiversity	Ecological function of the landform will be aligned with the regional catchment strategy	Partly Complies	Water treatment and management required to complement future land use and ecological function Rehabilitation will be undertaken in accordance with determined and approved land use and ecological values	Complies	Rehabilitation will be undertaken in accordance with determined and approved land use and ecological values	Complies	Rehabilitation will be undertaken in accordance with determined and approved land use and ecological values	Non-compliant	Supported land use not likely to be ecologically based	Complies	Water treatment and management required to complement future land use and ecological function Rehabilitation will be undertaken in accordance with determined and approved land use and ecological values	Partly Complies	Rehabilitation will be undertaken in accordance with determined and approved land use and ecological values
Future beneficial land use	The landform supports multiple land uses and the ability to adapt as community changes	Complies	Water quality can be maintained to support multiple land uses Land use within areas adjacent to lake will be restricted due to water quality impacts Land will be transferred to new ownership	Complies	Land will be transferred to new ownership	Complies	Land will be transferred to new ownership	Partly Complies	Land use options limited to high intensity and utility (power generation use) Strong economic and social driver required for final land use to offset management costs in long term (e.g. waste facility) Land will be transferred to new ownership	Complies	Water quality can be maintained to support multiple land uses Land use within areas adjacent to lake will be restricted due to water quality impacts Land will be transferred to new ownership	Partly Complies	Land use options limited to high intensity and utility (power generation use) Strong economic and social driver required for final land use to offset management costs in long term (e.g. waste facility) Land will be transferred to new ownership
Compatibility	The landform supports multiple landform options at other sites	Complies	Ability to fill and maintain lake not prevented by dewatering at adjacent operations	Partly complies	Requirement to access additional off site material may prevent adjacent mines to achieve weight balance or backfill based landforms	Partly complies	Requirement for additional off site material may prevent adjacent mines to achieve weight balance or backfill based landforms	Partly complies	Requirement for dewatering may prevent ability of adjacent mines to achieve weight balance and lake based landforms	Complies	Ability to fill and maintain lake not prevented by dewatering at adjacent operations	Partly complies	Requirement for dewatering may prevent ability of adjacent mines to achieve weight balance and lake based landforms



Criteria	Compliance Statement	Option - Pit Lake		Option - Full Back Fill		Option - Partial Backfill Above the Water Table		Option - Lined Void		Option - Partial Backfill below the Water Table		Option - Rehabilitated Void	
		Rating	Assumptions	Rating	Assumptions	Rating	Assumptions	Rating	Assumptions	Rating	Assumptions	Rating	Assumptions
Statutory and Work Plan Considerations	<p>The landform encompasses community attitudes and minimises the special conditions pursuant to relevant legislation at the time</p> <p>The landform does not require significant deviation from the current mine plans</p> <p>The landform is compliant with the <i>Mineral Resources (Sustainable Development) Act 1990</i></p>	Complies	<p>Lake has general community acceptance as landform</p> <p>Will require regulation of water management ion medium and long term</p> <p>Would require only minor modification to existing Work Plan</p>	Non-compliant	<p>Back fill of pits is considered best practice</p> <p>Transfer of materials between sites may require environmental and cultural approval</p> <p>Resubmission of Work Plan required to achieve access to significant volumes of backfill material external to the mine</p>	Non-compliant	<p>Back fill of pits is considered best practice</p> <p>Transfer of materials between sites may require environmental and cultural approval</p> <p>Resubmission of Work Plan required to achieve access to significant volumes of backfill material external to the mine</p>	Non-compliant	<p>Strong economic and social driver required for final land use to offset management costs in long term (e.g. waste facility)</p> <p>Will require regulation of water management ion medium and long term</p> <p>Resubmission of work plan required to achieve approval for engineered liner</p> <p>Would require compatible land use to be driver</p> <p>Would require continuation and licencing of dewatering operations within the long term</p>	Complies	<p>Lake has general community acceptance as landform</p> <p>Back fill of pits is considered best practice</p> <p>Is the currently approved landform</p>	Non-compliant	<p>Strong economic and social driver required for final land use to offset management costs in long term</p> <p>Will require regulation of water management ion medium and long term</p> <p>Resubmission of Work Plan required to achieve approval</p>

C.2 Assessment of preliminary options at Hazelwood

All six landform options were assessed for Hazelwood using the MCA methodology, results from the assessment are summarised in Table 10-11. Ratings are made on the basis that compliance can be achieved with sound technical certainty, acceptable residual risk and reasonable cost.

Table 10-11 Assessment of preliminary options at Hazelwood

Criteria	Compliance Statement	Preliminary Options Assessment					
		Option - Pit Lake	Option - Full Back Fill	Option - Partial Backfill above the Water Table	Option - Lined Void	Option - Partial Backfill below the Water Table	Option - Rehabilitated Void
Fire risk	<ul style="list-style-type: none"> Progressive implementation of the landform will maintain or reduce the fire risk in the medium and long term. 	Exceeds Compliance	Exceeds Compliance	Complies	Complies	Complies	Complies
Mine Stability	<ul style="list-style-type: none"> Establishment of the landform will sustain safety and stability requirements during operations 	Complies	Complies	Complies	Partly Complies	Complies	Partly Complies
Final Landform stability	<ul style="list-style-type: none"> Establishment of the landform will achieve safety and stability requirements following the cessation of operations 	Complies	Complies	Complies	Partly Complies	Complies	Partly Complies
Groundwater	<ul style="list-style-type: none"> The landform will not alter groundwater quality (from background). The landform will not impact upon groundwater dependent ecosystems (GDE's). The landform will not impact on groundwater availability for other users. 	Partly Complies	Complies	Complies	Partly Complies	Partly Complies	Partly complies
Surface water	<ul style="list-style-type: none"> The landform will not alter surface water drainage or water quality (from background). The landform will not impact upon ecological water requirements. Thee landform will not impact on surface water availability for other users. 	Partly Complies	Exceeds Compliance	Complies	Complies	Complies	Complies
Biodiversity	<ul style="list-style-type: none"> Ecological function of the landform will be aligned with the regional catchment strategy. 	Partly Complies	Complies	Complies	Non-Compliant	Complies	Partly Complies
Future beneficial land use	<ul style="list-style-type: none"> The landform supports multiple land uses and the ability to adapt to changing community expectations, economic conditions and environmental values. 	Complies	Complies	Complies	Partly Complies	Complies	Partly Complies
Compatibility	<ul style="list-style-type: none"> The landform supports multiple landform options at other sites. 	Complies	Partly complies	Partly complies	Partly complies	Complies	Partly complies

Criteria	Compliance Statement	Preliminary Options Assessment					
		Option - Pit Lake	Option - Full Back Fill	Option - Partial Backfill above the Water Table	Option - Lined Void	Option - Partial Backfill below the Water Table	Option - Rehabilitated Void
Statutory and Work Plan Considerations	<ul style="list-style-type: none"> The landform is compliant with the <i>Mineral Resources (Sustainable Development) Act 1990</i> The landform does not require significant deviation from the current mine plans The landform minimises the special conditions pursuant to relevant legislation at the time. 	Complies	Non-compliant	Non-compliant	Non-compliant	Complies	Non-compliant

During the MCA assumptions, advantages and disadvantages for the 6 preliminary rehabilitation options at Hazelwood were recorded to determine potential viable options. This information is provided below.

Table 10-12 Assessment of preliminary options at Hazelwood

Criteria	Compliance Statement	Option - Pit Lake		Option - Full Back Fill		Option - Partial Backfill above the Water Table		Option - Lined Void		Option - Partial Backfill below the Water Table		Option - Rehabilitated Void	
		Rating	Assumptions	Rating	Assumptions	Rating	Assumptions	Rating	Assumptions	Rating	Assumptions	Rating	Assumptions
Fire risk	Progressive implementation of the landform will maintain or reduce the fire risk in the medium and long term	Exceeds Compliance	Operational controls for fire prevention and response are maintained in short and medium term All exposed batters above lake water level (LWL) are progressively covered with overburden	Exceeds Compliance	Operational controls for fire prevention and response are maintained in short and medium term All exposed batters above backfill (BFL) sufficiently covered with overburden Fill material above water table level is non-combustible	Complies	Operational controls for fire prevention and response are maintained in short and medium term All exposed batters above BFL are progressively covered with overburden	Complies	Operational controls for fire prevention and response are maintained in short term and medium term Liner to be engineered to be a fire barrier	Complies	Operational controls for fire prevention and response are maintained in short and medium term All exposed batters above LWL and BFL are sufficiently covered with overburden Fill material above water table level is non-combustible	Complies	Operational controls for fire prevention and response are maintained in short and medium term All batters to be covered with overburden
Mine Stability	Establishment of the landform will sustain safety and stability requirements during operations	Complies	Dewatering and depressurisation of the mine will continue within the short term Progressive placement of overburden on pit floor and batters will be undertaken Progressive rehabilitation above final lake water level will be undertaken	Complies	Dewatering and depressurisation of the mine will continue within the short term Progressive placement of overburden on pit floor and batters will be undertaken Progressive rehabilitation above BFL will be undertaken	Complies	Dewatering and depressurisation of the mine will continue within the short term Progressive placement of overburden on pit floor and batters will be undertaken Progressive rehabilitation above BFL will be undertaken	Partly Complies	Dewatering and depressurisation of the mine will continue within the short term Progressive capping of batters will be undertaken within the short term Shaping to required batter angles and construction of final surface can be achieved in combination with available overburden	Complies	Dewatering and depressurisation of the mine will continue within the short term Progressive placement of overburden on pit floor and batters will be undertaken Reshaping of batters and backfill above LWL will be undertaken	Partly Complies	Dewatering and depressurisation of the mine will continue in the short term Shaping to required batter angles and construction of final surface can be achieved in combination with available overburden
Final Landform stability	Establishment of the landform will achieve safety and stability requirements following the cessation of operations	Complies	Sufficient placement of overburden can be achieved prior to cessation of dewatering to maintain weight balance during filling Cessation of dewatering and depressurisation will be managed over medium term to maintain weight above weight balance limit The lake water level (LWL) can be actively maintained with balance of groundwater and surface	Complies	Additional material will need to be sourced from off site to achieve backfill level Cessation of dewatering and depressurisation will be managed over medium term to maintain weight above weight balance limit	Complies	Additional material will need to be sourced from off site to achieve backfill level Cessation of dewatering and depressurisation will be managed over medium term to maintain weight above weight balance limit Walls above expected backfill level will be reshaped to profile consistent with stability requirements	Partly Complies	Reshaping of batter angles to required stability unlikely to be achieved with available overburden Dewatering and depressurisation of the mine will continue within and beyond the medium and long term	Complies	Sufficient placement of overburden can be achieved prior to cessation of dewatering to maintain weight balance during filling Depressurisation will be managed over medium term to maintain weight above weight balance limit The lake water level (LWL) can be actively maintained with balance of groundwater and surface water inflows	Partly Complies	Reshaping of batter angles to required stability unlikely to be achieved with available overburden Dewatering and depressurisation of the mine will continue within the medium and long term

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Criteria	Compliance Statement	Option - Pit Lake		Option - Full Back Fill		Option - Partial Backfill above the Water Table		Option - Lined Void		Option - Partial Backfill below the Water Table		Option - Rehabilitated Void	
		Rating	Assumptions	Rating	Assumptions	Rating	Assumptions	Rating	Assumptions	Rating	Assumptions	Rating	Assumptions
			water inflows Progressive rehabilitation above final lake water level will be undertaken								Progressive rehabilitation above final lake water level will be undertaken Progressive rehabilitation of batters and backfill above LWL will be undertake		
Groundwater	The landform will not alter groundwater quality (from background). The landform will not impact upon groundwater dependent ecosystems (GDE's). The landform will not impact on groundwater availability for other users	Partly Complies	Will require active flushing or water cycling within the pit to manage water quality. The pit will need to be managed as a sink for groundwater that will require permanent licence or allocation.	Complies	The fill material has similar chemical signature as the aquifers or is inert Natural flow through of groundwater will be achieved	Complies	The fill material has similar chemical signature as the aquifers or is inert Natural flow through of groundwater will be achieved	Partly Complies	Sufficient clay material to achieve hydraulic barrier is unlikely to be available Dewatering and depressurisation of the void will continue within and beyond the medium and long term	Partly Complies	Will require active flushing or water cycling within the pit to manage water quality. Lake water level (LWL) will be maintained below groundwater level (GWL) [i.e. lake will act as groundwater sink]	Partly complies	Dewatering and depressurisation of the void will continue within and beyond the medium and long term
Surface water	The landform will not alter surface water drainage or water quality (from background) The landform will not impact upon ecological water requirements The landform will not impact on surface water availability for other users	Partly Complies	Management of water allocation and discharge will be required over medium and long term Natural flows will be constrained due to requirement to maintain LWL in medium and long term	Exceeds Compliance	Final landform will conform to general drainage pattern of surrounding area Natural flows will be returned to adjacent rivers in medium and long term	Complies	Will require significant drainage control around pit to exclude external inflows Will require management of internal water capture through evaporation Natural flows will be returned to adjacent rivers in medium and long term	Complies	Will require significant drainage control around pit to exclude external inflows Will require management of internal water capture through evaporation Natural flows will be returned to adjacent rivers in medium and long term	Complies	allocation and discharge will be required over medium and long term Natural flows will be constrained due to requirement to maintain LWL in medium and long term	Complies	Will require significant drainage control around pit to exclude external inflows Will require management of internal water capture through evaporation Natural flows will be returned to adjacent rivers in medium and long term
Biodiversity	Ecological function of the landform will be aligned with the regional catchment strategy	Partly Complies	Water treatment and management required to complement future land use and ecological function Rehabilitation will be undertaken in accordance with determined and approved land use and ecological values Supported land use not likely to be ecologically based	Complies	Rehabilitation will be undertaken in accordance with determined and approved land use and ecological values	Complies	Rehabilitation will be undertaken in accordance with determined and approved land use and ecological values	Non-compliant	Supported land use not likely to be ecologically based	Complies	Water treatment and management required to complement future land use and ecological function Rehabilitation will be undertaken in accordance with determined and approved land use and ecological values	Partly Complies	Rehabilitation will be undertaken in accordance with determined and approved land use and ecological values
Future beneficial land use	The landform supports multiple land uses and the ability to adapt as community changes	Complies	Water quality can be maintained to support multiple land uses Land use within areas adjacent to lake will be restricted due to water quality impacts Land will be transferred to new ownership	Complies	Land will be transferred to new ownership	Complies	Land will be transferred to new ownership	Partly Complies	Land use options limited to high intensity and utility (power generation use) Strong economic and social driver required for final land use to offset management costs in long term (e.g. waste facility)	Complies	Water quality can be maintained to support multiple land uses Land use within areas adjacent to lake will be restricted due to water quality impacts Land will be transferred to new ownership	Partly Complies	Land use options limited to high intensity and utility (power generation use) Strong economic and social driver required for final land use to offset management costs in long term (e.g. waste facility)



Criteria	Compliance Statement	Option - Pit Lake		Option - Full Back Fill		Option - Partial Backfill above the Water Table		Option - Lined Void		Option - Partial Backfill below the Water Table		Option - Rehabilitated Void	
		Rating	Assumptions	Rating	Assumptions	Rating	Assumptions	Rating	Assumptions	Rating	Assumptions	Rating	Assumptions
									Land will be transferred to new ownership				Land will be transferred to new ownership
Compatibility	The landform supports multiple landform options at other sites	Complies	Ability to fill and maintain lake not prevented by dewatering at adjacent operations	Partly complies	Requirement to access additional off site material may prevent adjacent mines to achieve weight balance or backfill based landforms	Partly complies	Requirement for additional off site material may prevent adjacent mines to achieve weight balance or backfill based landforms	Partly complies	Requirement for dewatering may prevent ability of adjacent mines to achieve weight balance and lake based landforms	Complies	Ability to fill and maintain lake not prevented by dewatering at adjacent operations	Partly complies	Requirement for dewatering may prevent ability of adjacent mines to achieve weight balance and lake based landforms
Statutory and Work Plan Approval	The landform encompasses community attitudes and minimises the special conditions pursuant to relevant legislation at the time The landform does not require significant deviation from the current mine plans The landform is compliant with the <i>Mineral Resources (Sustainable Development) Act 1990</i>	Complies	Lake has general community acceptance as landform Will require regulation of water management ion medium and long term Would require only minor modification to existing Work Plan	Non-Compliant	Back fill of pits is considered best practice Transfer of materials between sites may require environmental and cultural approval Resubmission of Work Plan required to achieve access to significant volumes of backfill material external to the mine	Non-compliant	Back fill of pits is considered best practice Transfer of materials between sites may require environmental and cultural approval Resubmission of Work Plan required to achieve access to significant volumes of backfill material external to the mine	Non-compliant	Strong economic and social driver required for final land use to offset management costs in long term (e.g. waste facility) Will require regulation of water management ion medium and long term Resubmission of Work Plan required to achieve approval for engineered liner	Complies	Lake has general community acceptance as landform Back fill of pits is considered best practice Is the currently approved landform	Non-compliant	Resubmission of Work Plan required to achieve approval for engineered liner Would require compatible land use to be driver Would require continuation and licencing of dewatering operations within the long term

C.3 Assessment of preliminary options at Loy Yang

All six landform options were assessed for Loy Yang using the MCA methodology, results from the assessment are summarised in **Table 10-13**. Ratings are made on the basis that compliance can be achieved with sound technical certainty, acceptable residual risk and reasonable cost.

Table 10-13 Loy Yang Assessment of Preliminary Options

Criteria	Compliance Statement	Preliminary Options Assessment					
		Option - Pit Lake	Option - Full Back Fill	Option – Partial Backfill above the Water Table	Option - Lined Void	Option - Partial Backfill below the Water Table	Option - Rehabilitated Void
Fire risk	<ul style="list-style-type: none"> Progressive implementation of the landform will maintain or reduce the fire risk in the medium and long term. 	Exceeds Compliance	Exceeds Compliance	Complies	Complies	Complies	Complies
Mine Stability	<ul style="list-style-type: none"> Establishment of the landform will sustain safety and stability requirements during operations 	Complies	Complies	Complies	Partly Complies	Complies	Partly Complies
Final Landform stability	<ul style="list-style-type: none"> Establishment of the landform will achieve safety and stability requirements following the cessation of operations 	Complies	Complies	Complies	Partly Complies	Complies	Partly Complies
Groundwater	<ul style="list-style-type: none"> The landform will not alter groundwater quality (from background). The landform will not impact upon groundwater dependent ecosystems (GDE's). The landform will not impact on groundwater availability for other users. 	Partly Complies	Complies	Complies	Partly Complies	Partly Complies	Partly complies
Surface water	<ul style="list-style-type: none"> The landform will not alter surface water drainage or water quality (from background). The landform will not impact upon ecological water requirements. Thee landform will not impact on surface water availability for other users. 	Partly Complies	Exceeds Compliance	Complies	Complies	Complies	Complies
Biodiversity	<ul style="list-style-type: none"> Ecological function of the landform will be aligned with the regional catchment strategy. 	Partly Complies	Complies	Complies	Non-compliant	Complies	Partly Complies
Future beneficial land use	<ul style="list-style-type: none"> The landform supports multiple land uses and the ability to adapt to changing community expectations, economic conditions and environmental values. 	Complies	Complies	Complies	Partly Complies	Complies	Partly Complies



Criteria	Compliance Statement	Preliminary Options Assessment					
		Option - Pit Lake	Option - Full Back Fill	Option – Partial Backfill above the Water Table	Option - Lined Void	Option - Partial Backfill below the Water Table	Option - Rehabilitated Void
Compatibility	<ul style="list-style-type: none"> The landform supports multiple landform options at other sites. 	Complies	Partly complies	Partly complies	Partly complies	Complies	Partly complies
Statutory and Work Plan Considerations	<ul style="list-style-type: none"> The landform is compliant with the <i>Mineral Resources (Sustainable Development) Act 1990</i> The landform does not require significant deviation from the current mine plans The landform minimises the special conditions pursuant to relevant legislation at the time. 	Complies	Non-compliant	Non-compliant	Non-compliant	Complies	Non-compliant

During the MCA assumptions, advantages and disadvantages for the 6 preliminary rehabilitation options at Loy Yang were recorded to determine those which were potentially viable. This information is provided below.

Table 10-14 Assessment of preliminary options at Loy Yang

Criteria	Compliance Statement	Option - Pit Lake		Option - Full Back Fill		Option - Partial Backfill above the Water Table		Option 4- Lined Void		Option - Partial Backfill below the Water Table		Option - Rehabilitated Void	
		Rating	Assumptions	Rating	Assumptions	Rating	Assumptions	Rating	Assumptions	Rating	Assumptions	Rating	Assumptions
Fire risk	Progressive implementation of the landform will maintain or reduce the fire risk in the medium and long term	Exceeds Compliance	Operational controls for fire prevention and response are maintained in short and medium term All exposed batters above LWL are progressively covered with overburden	Exceeds Compliance	Operational controls for fire prevention and response are maintained in short and medium term All exposed batters above BFL sufficiently covered with overburden Fill material above water table level is non-combustible	Complies	Operational controls for fire prevention and response are maintained in short and medium term All exposed batters above BFL are progressively covered with overburden	Complies	Operational controls for fire prevention and response are maintained in short and medium term Liner to be engineered to be a fire barrier	Complies	Operational controls for fire prevention and response are maintained in short and medium term All exposed batters above LWL and BFL are sufficiently covered with overburden Fill material above water table level is non-combustible	Complies	Operational controls for fire prevention and response are maintained in short and medium term All batters to be covered with overburden
Mine Stability	Establishment of the landform will sustain safety and stability requirements during operations	Complies	Dewatering and depressurisation of the mine will continue within the short term Progressive placement of overburden on pit floor and batters will be undertaken Progressive rehabilitation above final lake water level will be undertaken	Complies	Dewatering and depressurisation of the mine will continue within the short term Progressive placement of overburden on pit floor and batters will be undertaken Progressive rehabilitation above BFL will be undertaken	Complies	Dewatering and depressurisation of the mine will continue within the short term Progressive placement of overburden on pit floor and batters will be undertaken Progressive rehabilitation above BFL will be undertaken	Partly Complies	Dewatering and depressurisation of the mine will continue within the short term Progressive capping of batters will be undertaken within the short term Shaping to required batter angles and construction of final surface can be achieved in combination with available overburden	Complies	Dewatering and depressurisation of the mine will continue within the short term Progressive placement of overburden on pit floor and batters will be undertaken Reshaping of batters and backfill above LWL will be undertaken	Partly Complies	Dewatering and depressurisation of the mine will continue in the short term Shaping to required batter angles and construction of final surface can be achieved in combination with available overburden
Final Landform stability	Establishment of the landform will achieve safety and stability requirements following the cessation of operations	Complies	Sufficient placement of overburden can be achieved prior to cessation of dewatering to maintain weight balance during filling Cessation of dewatering and depressurisation will be managed over medium term to maintain weight above weight balance limit It is unlikely that the required lake water level	Complies	Additional material will need to be sourced from off site to achieve backfill level Cessation of dewatering and depressurisation will be managed over medium term to maintain weight above weight balance limit	Complies	Additional material will need to be sourced from off site to achieve backfill level Cessation of dewatering and depressurisation will be managed over medium term to maintain weight above weight balance limit Walls above expected backfill level will be reshaped to profile consistent with stability requirements	Partly Complies	Reshaping of batter angles to required stability unlikely to be achieved with available overburden Dewatering and depressurisation of the mine will continue within and beyond the medium and long term	Complies	Sufficient placement of overburden can be achieved prior to cessation of dewatering to maintain weight balance during filling Depressurisation will be managed over medium term to maintain weight above weight balance limit The lake water level (LWL) can be actively maintained with balance of groundwater and surface	Partly Complies	Reshaping of batter angles to required stability unlikely to be achieved with available overburden Dewatering and depressurisation of the mine will continue within the medium and long term

Report on Future Options For Rehabilitating the Hazelwood, Yallourn and Loy Yang Mines in the Latrobe Valley



Criteria	Compliance Statement	Option - Pit Lake		Option - Full Back Fill		Option - Partial Backfill above the Water Table		Option 4- Lined Void		Option - Partial Backfill below the Water Table		Option - Rehabilitated Void	
		Rating	Assumptions	Rating	Assumptions	Rating	Assumptions	Rating	Assumptions	Rating	Assumptions	Rating	Assumptions
			(LWL) can be actively maintained with balance of groundwater and surface water inflows Progressive rehabilitation above final lake water level will be undertaken								water inflows Progressive rehabilitation above final lake water level will be undertaken Progressive rehabilitation of batters and backfill above LWL will be undertake		
Groundwater	The landform will not alter groundwater quality (from background). The landform will not impact upon groundwater dependent ecosystems (GDE's). The landform will not impact on groundwater availability for other users	Partly Complies	Will require active flushing or water cycling within the pit to manage water quality. Management of the pit lake as a sink for groundwater is unlikely to be achievable	Complies	The fill material has similar chemical signature as the aquifers or is inert Natural flow through of groundwater will be achieved	Complies	The fill material has similar chemical signature as the aquifers or is inert Natural flow through of groundwater will be achieved	Partly Complies	Sufficient clay material to achieve hydraulic barrier is unlikely to be available Dewatering and depressurisation of the void will continue within and beyond the medium and long term	Partly Complies	Will require active flushing or water cycling within the pit to manage water quality. Lake water level (LWL) will be maintained below groundwater level (GWL) [i.e. lake will act as groundwater sink]	Partly complies	Dewatering and depressurisation of the void will continue within and beyond the medium and long term
Surface water	The landform will not alter surface water drainage or water quality (from background) The landform will not impact upon ecological water requirements The landform will not impact on surface water availability for other users	Partly Complies	Management of water allocation and discharge will be required over medium and long term Natural flows will be constrained due to requirement to maintain LWL in medium and long term	Exceeds Compliance	Final landform will conform to general drainage pattern of surrounding area Natural flows will be returned to adjacent rivers in medium and long term	Complies	Will require significant drainage control around pit to exclude external inflows Will require management of internal water capture through evaporation Natural flows will be returned to adjacent rivers in medium and long term	Complies	Will require significant drainage control around pit to exclude external inflows Will require management of internal water capture through evaporation Natural flows will be returned to adjacent rivers in medium and long term	Complies	allocation and discharge will be required over medium and long term Natural flows will be constrained due to requirement to maintain LWL in medium and long term	Complies	Will require significant drainage control around pit to exclude external inflows Will require management of internal water capture through evaporation Natural flows will be returned to adjacent rivers in medium and long term
Biodiversity	Ecological function of the landform will be aligned with the regional catchment strategy	Partly Complies	Water treatment and management required to complement future land use and ecological function Rehabilitation will be undertaken in accordance with determined and approved land use and ecological values Supported land use not likely to be ecologically based	Complies	Rehabilitation will be undertaken in accordance with determined and approved land use and ecological values	Complies	Rehabilitation will be undertaken in accordance with determined and approved land use and ecological values	Non-compliant	Supported land use not likely to be ecologically based	Complies	Water treatment and management required to complement future land use and ecological function Rehabilitation will be undertaken in accordance with determined and approved land use and ecological values	Partly Complies	Rehabilitation will be undertaken in accordance with determined and approved land use and ecological values

Report on Future Options For Rehabilitating the Hazelwood, Yallourn and Loy Yang Mines in the Latrobe Valley



Criteria	Compliance Statement	Option - Pit Lake		Option - Full Back Fill		Option - Partial Backfill above the Water Table		Option 4- Lined Void		Option - Partial Backfill below the Water Table		Option - Rehabilitated Void	
		Rating	Assumptions	Rating	Assumptions	Rating	Assumptions	Rating	Assumptions	Rating	Assumptions	Rating	Assumptions
Future beneficial land use	The landform supports multiple land uses and the ability to adapt as community changes	Complies	Water quality can be maintained to support multiple land uses Land use within areas adjacent to lake will be restricted due to water quality impacts Land will be transferred to new ownership	Complies	Land will be transferred to new ownership	Complies	Land will be transferred to new ownership	Partly Complies	Land use options limited to high intensity and utility (power generation use) Strong economic and social driver required for final land use to offset management costs in long term (e.g. waste facility) Land will be transferred to new ownership	Complies	Water quality can be maintained to support multiple land uses Land use within areas adjacent to lake will be restricted due to water quality impacts Land will be transferred to new ownership	Partly Complies	Land use options limited to high intensity and utility (power generation use) Strong economic and social driver required for final land use to offset management costs in long term (e.g. waste facility) Land will be transferred to new ownership
Compatibility	The landform supports multiple landform options at other sites	Complies	Ability to fill and maintain lake not prevented by dewatering at adjacent operations	Partly complies	Requirement to access additional off site material may prevent adjacent mines to achieve weight balance or backfill based landforms	Partly complies	Requirement for additional off site material may prevent adjacent mines to achieve weight balance or backfill based landforms	Partly complies	Requirement for dewatering may prevent ability of adjacent mines to achieve weight balance and lake based landforms	Complies	Ability to fill and maintain lake not prevented by dewatering at adjacent operations	Partly complies	Requirement for dewatering may prevent ability of adjacent mines to achieve weight balance and lake based landforms
Statutory and Work Plan Considerations	The landform encompasses community attitudes and minimises the special conditions pursuant to relevant legislation at the time The landform does not require significant deviation from the current mine plans The landform is compliant with the <i>Mineral Resources (Sustainable Development) Act 1990</i>	Complies	Lake has general community acceptance as landform Will require regulation of water management ion medium and long term Would require only minor modification to existing Work Plan	Non-compliant	Back fill of pits is considered best practice Transfer of materials between sites may require environmental and cultural approval Resubmission of Work Plan required to achieve access to significant volumes of backfill material external to the mine	Non-compliant	Back fill of pits is considered best practice Transfer of materials between sites may require environmental and cultural approval Resubmission of Work Plan required to achieve access to significant volumes of backfill material external to the mine	Non-compliant	Strong economic and social driver required for final land use to offset management costs in long term (e.g. waste facility) Will require regulation of water management ion medium and long term Resubmission of Work Plan required to achieve approval for engineered liner	Complies	Lake has general community acceptance as landform Back fill of pits is considered best practice Is the currently approved landform	Non-compliant	Resubmission of Work Plan required to achieve approval Would require compatible land use to be driver Would require continuation and licencing of dewatering operations within the long term